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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,531	09/11/2001	Yvan Strauven	U.MINIERE-03	4239
42253	7590	03/23/2007		
MISHRILAL JAIN 11620 MASTERS RUN ELLCOTT CITY, MD 21042			EXAMINER CREPEAU, JONATHAN	
			ART UNIT	PAPER NUMBER
			1745	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/23/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/936,531

Applicant(s)

STRAUVEN ET AL.

Examiner

Jonathan S. Crepeau

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2-15-07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office action addresses claims 1-17. The claims remain rejected herein for the reasons of record. Accordingly, this action is made final.

Claim Rejections - 35 USC § 103

2. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 94/19502 in view of Suzuki (U.S. Patent 5,917,113).

Regarding claim 5, WO '502 is directed to an alkaline battery comprising an anode, cathode, and electrolyte (see claim 23 of the reference). Regarding claim 1, the anode comprises a zinc alloy having a composition which anticipates each of the claimed compositions (a), (b), and (c). For example, the alloy disclosed at page 5, line 30, which contains 70 ppm (0.007 wt%) Al and 250 ppm (0.025 wt%) Bi, anticipates alloy (c) of instant claim 1. The alloy disclosed at page 6, line 12 (0.007 wt% Al, 0.025 wt% In) anticipates alloy (a) of instant claim 1. The alloy disclosed at page 6, line 21 (0.003 wt% Al, 0.025 wt% In, 0.025 wt% Bi) anticipates alloy (b) of instant claims 1 and 2. Regarding claim 6, the powder comprises metal cemented out of the electrolyte (see claim 24 of the reference). Regarding claim 1, the powder can be made by a centrifugal atomization process (see page 3, line 30).

WO '502 does not expressly teach that the centrifugal atomization process is carried out in an atmosphere with a relatively low (i.e., <4vol%) oxygen content, as recited in claims 1, 3, 4, 7-11 and 15-17.

Suzuki is directed to a process for producing spherical metal particles. The process involves centrifugally atomizing molten metal in an atmosphere containing 3-600 ppm oxygen (see abstract).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the disclosure of Suzuki would motivate the artisan to conduct the centrifugal atomization of WO '502 in an atmosphere containing a relatively low (i.e., 3-600 ppm) amount of oxygen. In column 4, line 43, Suzuki teaches that "as has been discussed above in detail, the production process of the present invention permits mass-production of fluent, spherical metal particles having a smooth surface, in low cost and excellent in dispersibility in a dispersing medium." Accordingly, the artisan would be motivated to conduct the centrifugal atomization of WO '502 in an atmosphere containing a relatively low (i.e., 3-600 ppm) amount of oxygen. Although the parts per million unit of the Suzuki reference is determined on a mass basis (see abstract), this is still believed to render obvious the claimed volume percentages of oxygen content (less than 4% as recited in claim 1, or 0.2-3.5% as recited in claim 3).

Response to Arguments

3. Applicant's arguments filed February 13, 2007 have been fully considered but they are not persuasive. Applicant states that it is known in the art that the particles in battery-grade zinc powders do not have spherical shapes, as evidenced by the relevant portions of *Handbook of Batteries* and WO 99/07030. It is further contended that a skilled artisan would not be motivated to apply the teachings of Suzuki to WO 94/19502 because Suzuki discloses that his centrifugal atomization process produces spherical particles. Applicant's argument has been considered but is not persuasive for the following reasons. U.S. Patent 6,472,103 to Durkot et al (effective date July 15, 1998), is directed to a zinc electrode for an alkaline battery. In the abstract, the reference teaches that "the zinc-based particles can be alloyed with, for example, indium and/or bismuth and be of **spherical**, acicular, or flake shape" (emphasis added). Further, it is taught at column 3, line 31 that "[t]he zinc-based particles can be spherical or nonspherical in shape." Thus, the reference clearly teaches that spherical zinc particles are appropriate for use in an alkaline battery electrode. As such, the skilled artisan would understand that the teachings of Suzuki relating to spherical particles produced by centrifugal atomization would be applicable to the centrifugally atomized powders of WO '502. In addition, Applicant's contention that *Handbook of Batteries* and WO 99/07030 "teach away" from spherical particles is not persuasive. Both of these documents disclose that non-spherical particle shapes are appropriate for use in battery grade zinc powders, but neither reference contains an explicit teaching that using spherical powder is detrimental or otherwise produces a negative effect. Thus, a person of skill in the art, also being aware of US 6,472,103, would view the non-spherical shapes as *preferred embodiments* of a zinc powder. The disclosure of such preferred embodiments

generally does not constitute a “teaching away” from nonpreferred embodiments (MPEP 2123 (II)). Further, pursuant to MPEP 2143.01(II), to the extent that the teachings in the prior art are considered to be “conflicting,” the suggestive power of each reference must be weighed in determining obviousness of the claimed invention. In this case, the fact that spherical particles are disclosed as suitable for use in Zn powders enables the skilled artisan to see that the teachings of Suzuki are relevant to the powders of WO ‘502. Accordingly, the rejection as stated above is believed to be proper.

Conclusion

4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299.

The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (571) 272-1292. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Crepeau
Primary Examiner
Art Unit 1745
March 19, 2007